

Vermont Mental Health Performance Indicator Project
Weekly Report
September 17, 1999

Length-of-Stay in Different Types of Hospitals: Vermont. 1990 – 1996

This week's PIP broadens our ongoing examination of length-of-stay in inpatient facilities to include all hospitals in which Vermont residents received inpatient mental health services. The information is based on a combination of three distinct data sets: the Hospital Discharge Data Set maintained by the Vermont Department of Health; the Vermont State Hospital Management Information System, and a database extract obtained from the Brattleboro Retreat. A more comprehensive picture of the behavioral health care services provided to Vermont residents during 1990 through 1996 is provided by the DDMHS Inpatient Data Book. (To obtain a copy, contact Pam Mack at 241-2639, or pmack@ddmhs.state.vt.us).

For purposes of this report, length-of-stay is defined as the number of inpatient days during the target year per episode of hospitalization. If an episode of hospitalization includes more than one year, only the days in the target year are counted. As you will see (Table 2-6), the average length-of-stay for Vermont residents hospitalized for mental health care declined from 27 days in 1990 to 15 days in 1996. Throughout this period, people at the Vermont State Hospital had the longest stays, while the shortest stays were for people in general hospitals (in state and out-of-state).

During this period, the number of episodes of inpatient behavioral health care for Vermont residents increased substantially, but because of decreasing lengths-of-stay, the average daily census decreased substantially. The number of episodes decreased from 2,827 in 1990 to 3,950 in 1996 (Table 2-1), at the same time as the average daily census declined from 37 people per day in 1990 to 28 people per day in 1996 (Table 2-5). The Vermont State Hospital experienced a substantial decrease in episodes of care

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during this period, while other facilities increased their numbers of episodes in varying degrees. The only substantial change in average daily census during this period occurred at the Vermont State Hospital where the number of people in residence declined from 20 to 11 people per day between 1990 and 1996.

Finally, the total number of people who were hospitalized for mental health care during this period increased from 2,079 in 1990 to 2,549 in 1996 (Table 2-8). This growth in the number of people served was evident in the caseloads of general hospitals in Vermont, the Brattleboro Retreat, and general hospitals in New Hampshire. The Vermont State Hospital went contrary to this trend with a substantial reduction in the number of people served.

We look forward to the opportunity to analyze data describing more recent time periods to discover if these long-term trends have continued. We also look forward to evaluating the impact of changes in our systems of care on the utilization of inpatient mental health services. I will appreciate your comments and questions (802-241-2638 or jpandiani@ddmhs.state.vt.us).

Table 2-1
Episodes of Hospitalization
for Mental Illness
Vermont Residents: 1990 - 1996

Episodes of Hospitalization by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	2,827	2,922	2,925	3,263	3,433	3,571	3,950
VT General Hospitals	1,593	1,576	1,642	1,734	1,842	1,798	2,133
Vermont State Hospital	488	501	401	382	405	381	354
Brattleboro Retreat	163	178	207	313	329	467	578
VA Hospital - WRJ	162	178	179	174	178	182	183
New Hampshire Hospitals	390	451	444	576	616	661	632
Other Out-of-State Hospitals	31	38	52	84	63	82	70

Episodes of Hospitalization by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	2,827	2,922	2,925	3,263	3,433	3,571	3,950
Addison	84	100	114	135	142	138	178
Bennington	200	217	197	254	252	278	257
Caledonia	109	114	93	141	126	159	149
Chittenden	688	705	603	659	715	664	651
Essex	27	29	30	33	29	32	40
Franklin/Grand Isle	124	140	165	158	160	133	190
Lamoille	81	97	89	84	89	88	88
Orange	120	142	145	157	129	161	179
Orleans	132	132	118	159	172	140	140
Rutland	266	308	321	305	292	360	377
Washington	414	368	419	409	480	450	560
Windham	212	202	256	328	352	458	570
Windsor	354	359	372	428	478	488	550
Unknown	16	9	3	13	17	22	21

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital.

Table 2-5
Average Daily Census per 100,000 Population
for Mental Illness
Vermont Residents: 1990 - 1996

Average Daily Census per 100,000 Population by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	37	35	34	33	31	30	28
VT General Hospitals	9	9	10	9	9	8	9
Vermont State Hospital	20	18	17	15	13	13	11
Brattleboro Retreat	3	2	2	3	3	4	5
VA Hospital - WRJ	1	1	2	1	2	1	1
New Hampshire Hospitals	3	4	3	4	4	3	2
Other Out-of-State Hospitals	< 1	< 1	1	< 1	1	1	< 1

Average Daily Census per 100,000 Population by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	37	35	34	33	31	30	28
Addison	14	13	18	21	17	18	22
Bennington	28	30	26	29	33	32	28
Caledonia	25	27	22	20	19	18	18
Chittenden	36	39	37	35	31	31	25
Essex	11	20	15	17	30	14	22
Franklin/Grand Isle	21	23	26	21	23	15	21
Lamoille	37	36	24	28	23	15	15
Orange	25	26	34	28	19	21	25
Orleans	24	29	25	26	28	23	31
Rutland	24	22	24	20	20	28	21
Washington	92	72	68	61	60	53	47
Windham	40	37	46	50	41	47	51
Windsor	43	41	33	37	36	32	30
Unknown	1	< 1	< 1	< 1	< 1	< 1	< 1

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital.

Population figures used to calculate rates were obtained from the 1990 through 1996 Vital Statistics Reports published by the Vermont Department of Health.

Table 2-6
Average Length of Stay
for Mental Illness
Vermont Residents: 1990 - 1996

Average Length of Stay by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	27	25	24	21	19	18	15
VT General Hospitals	12	12	12	11	10	10	9
Vermont State Hospital	85	74	88	83	69	71	66
Brattleboro Retreat	35	28	21	22	21	19	20
VA Hospital - WRJ	16	17	21	16	18	16	15
New Hampshire Hospitals	16	17	15	14	13	9	7
Out-of-State Hospitals	15	13	21	10	23	17	10

Average Length of Stay by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	27	25	24	21	19	18	15
Addison	20	16	19	20	15	17	16
Bennington	18	18	17	15	17	15	14
Caledonia	24	24	24	15	15	12	13
Chittenden	25	27	30	26	22	24	20
Essex	10	17	12	12	25	10	13
Franklin/Grand Isle	28	27	28	23	25	20	20
Lamoille	33	27	20	25	20	13	14
Orange	20	18	22	17	15	13	14
Orleans	16	20	19	15	15	15	21
Rutland	20	17	17	15	16	18	13
Washington	45	40	33	31	26	24	18
Windham	29	28	28	24	18	16	14
Windsor	24	23	17	17	15	13	11
Unknown	74	37	28	39	38	31	18

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital.

Table 2-8
Unduplicated Number of People Hospitalized per 100,000 Population
for Mental Illness
Vermont Residents: 1990 - 1996

Unduplicated Number of People per 100,000 Population by Hospital Type

	1990	1991	1992	1993	1994	1995	1996
Total	369 \pm 3	370 \pm 3	368 \pm 3	392 \pm 3	409 \pm 2.9	410 \pm 2.9	433 \pm 3
VT General Hospitals	230 \pm 2	222 \pm 2	228 \pm 2	232 \pm 2	235 \pm 1.8	223 \pm 1.7	256 \pm 1.9
Vermont State Hospital	73	76	61	56	59	56	49
Brattleboro Retreat	26	28	31	41	44	65	76
VA Hospital - WRJ	22 \pm 0.7	25 \pm 0.7	22 \pm 0.6	24 \pm 0.6	24 \pm 0.6	26 \pm 0.6	23 \pm 0.5
New Hampshire Hospitals	53 \pm 0.3	59 \pm 0.3	60 \pm 0.3	77 \pm 0.3	85 \pm 0.4	86 \pm 0.4	75 \pm 0.4
Other Out-of-State Hospitals	NA	NA	NA	NA	NA	NA	NA

Unduplicated Number of People per 100,000 Population by County of Residence

	1990	1991	1992	1993	1994	1995	1996
Total	369 \pm 3	370 \pm 3	368 \pm 3	392 \pm 3	409 \pm 2.9	410 \pm 3	433 \pm 3
Addison	201 \pm 2.9	227 \pm 3.2	250 \pm 3.3	292 \pm 3.5	266 \pm 3.4	297 \pm 4	307 \pm 4
Bennington	126 \pm 2	138 \pm 2.1	96 \pm 1.8	129 \pm 2.1	161 \pm 2.4	193 \pm 3	184 \pm 3
Caledonia	321 \pm 4.1	335 \pm 3.9	262 \pm 3.6	359 \pm 4.3	351 \pm 4.5	422 \pm 5	338 \pm 4
Chittenden	383 \pm 3.1	400 \pm 3.3	349 \pm 2.9	348 \pm 2.8	365 \pm 3.1	333 \pm 3	335 \pm 3
Essex	298 \pm 7.5	379 \pm 7.8	366 \pm 7.9	423 \pm 8.9	341 \pm 7.4	370 \pm 8	477 \pm 10
Franklin/Grand Isle	224 \pm 2.6	239 \pm 2.8	271 \pm 3.2	255 \pm 3	276 \pm 3.1	220 \pm 3	289 \pm 3
Lamoille	336 \pm 4.8	379 \pm 4.9	347 \pm 4.9	336 \pm 4.7	305 \pm 4.4	316 \pm 5	276 \pm 4
Orange	338 \pm 4.4	403 \pm 5.1	393 \pm 4.7	372 \pm 4.6	370 \pm 4.5	428 \pm 5	453 \pm 5
Orleans	409 \pm 5.1	378 \pm 4.7	358 \pm 4.7	440 \pm 5.2	455 \pm 5.6	391 \pm 5	411 \pm 5
Rutland	357 \pm 3.4	363 \pm 3.3	384 \pm 3.5	369 \pm 3.4	371 \pm 3.4	409 \pm 4	409 \pm 4
Washington	542 \pm 4.8	445 \pm 4.1	522 \pm 4.9	477 \pm 4.5	511 \pm 4.7	487 \pm 4	550 \pm 5
Windham	398 \pm 4	375 \pm 3.9	441 \pm 4.4	507 \pm 4.9	615 \pm 5.5	673 \pm 6	827 \pm 7
Windsor	465 \pm 4.4	480 \pm 4.4	472 \pm 4.4	576 \pm 5.2	574 \pm 5.1	606 \pm 5	630 \pm 5
Unknown	3 \pm 0.1	1 \pm <.1	1 \pm <.1	2 \pm 0.1	3 \pm 0.1	3 \pm 0.1	3 \pm 0.1

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital.

The State of Vermont does not have unique client identifiers across service providers. For this reason, Probabilistic Population Estimation has been used to provide unduplicated counts of people served (with 95% confidence intervals). Estimates of the number of people served by Massachusetts and New York hospitals are not provided because the data is inadequate to provide probabilistic population estimates. Actual person counts are available for Brattleboro Retreat and the Vermont State Hospital.

Population figures used to calculate rates were obtained from the 1990 through 1996 Vital Statistics Reports published by the Vermont Department of Health.